

ABSTRACT

It is an object to provide a semiconductor memory device having a highly reliable and small-sized involatile memory by realizing a semiconductor memory element which restrains extreme concentration of an electric field onto a surface of activating layer in a channel region and is very minute. Further, it is an object thereof to provide a highly reliable and small-sized semiconductor memory device. There is fabricated a semiconductor memory element in which a surface of an activating layer is flat and which is very minute by using a crystallizing process of a semiconductor activating layer for adding a metal element onto a substrate having an insulating surface to subject to a heating processing and thereafter carrying out continuous oscillating laser irradiation. By using such a semiconductor memory element, a highly reliable and small-sized involatile memory and a semiconductor memory device having the involatile memory are provided.